LEXSEE 2000 U.S. APP. LEXIS 19978

IN RE DONALD R. HUENE

99-1514

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

2000 U.S. App. LEXIS 19978

August 11, 2000, Decided

SUBSEQUENT HISTORY: Reported in Table Case Format at: *2000 U.S. App. LEXIS 37478.*

PRIOR HISTORY: (Serial No. 08/425,453).

DISPOSITION: Affirmed.

JUDGES: Before NEWMAN, PLAGER, and SCHALL, Circuit Judges.

OPINIONBY: SCHALL

OPINION: SCHALL, Circuit Judge.

DECISION

Donald R. Huene ("Huene") appeals from the decision of the Board of Patent Appeals and Interferences ("Board") sustaining the rejection under *35 U.S.C. § 103* of claims 1-7, 9-11, and 14-24 of U.S. patent application no. 08/425,453, which were all of the claims pending in Huene's application. We affirm.

DISCUSSION

I.

A. The Huene Application

Huene's application is directed to an absorbable bone screw and a tool for its insertion. The screw is used in surgery to attach bone fragments. In the "FIELD OF THE INVENTION" portion of his application, Huene states: "The disclosed invention is a screw for the internal fixation of bone fragments. The screw is manufactured from a material which is absorbable by the body . . . . A tool to which the screw may be selectively fixed is also disclosed, and the tool maintains proper orientation and [*2] alignment of the screw throughout the insertion process." The prior art teaches that the use of absorbable bone screws is advantageous over the use of metal screws.

In the "BACKGROUND OF THE INVENTION" of his application, Huene states: "Absorbable bone screws . . . generally are formed from materials not having the strength characteristics of metal, so that prior surgical screwdrivers may not maintain proper orientation of the screw relative to the driver. The absorbable screw may, for example, become cocked or knocked off axis during insertion, with the result that the screw may not be properly inserted." Huene also describes "a need for an absorbable bone screw and a tool for its insertion which assure the proper positioning of the screw relative to the driver at all times. The disclosed invention is thus directed to a unique absorbable bone screw, and a tool especially adapted for insertion of that bone screw."

In the "OBJECTS AND SUMMARY OF THE INVENTION" of his application, Huene states: "The primary object of the disclosed invention is an absorbable bone screw which cooperates with a driver for maintaining proper orientation of the screw relative to the driver."

Figure 1 of [*3] the application shows an embodiment of the bone screw of the invention 10, 12, and 16 attached to the driver D1 of the invention. Figure 2 shows an embodiment of the bone screw and a portion of the attached driver. Figure 3 shows an embodiment of the bone screw that is not attached to a portion of the driver. In Figures 2 and 3, the screw S1 has a series of slots 24 configured to receive keys 44 extending from the driver D1. Another embodiment of the invention is shown in Figure 6, where screw S2 has a series of detents 68 for receiving posts 78 extending from the driver D2. In both embodiments, the screw head has a central threaded bore 22 or 66, separate from the detents or slots, that receives the threaded end of rod 28 (Figure 1) of the driver to secure the screw to the driver tool.

[SEE FIGURES 1, 2, 3 AND 6 IN ORIGINAL]

Claim 1 was selected as representative of claims 1-3, 6, 7, 9-11, 14-19, and 22-24. Claim 1 recites:

> A bone screw, comprising:
>
> a) a threaded shank having an axis of rotation;
>
> b) a head integral with said shank, said head including a surface disposed generally normal to said axis and said head and said shank formed from a bioabsorbable material;
>
> c) a [*4] plurality of driver means disposed about said surface wholly remote from said axis, each of said driver means adapted for engagement with a cooperating driver element of a rotary driver so that said head and thereby said shank may be rotated about said axis; and
>
> d) a threaded bore coaxial with said axis extending inwardly from said surface for threadedly engaging a cooperating threaded element of the rotary driver.

Claim 4 was chosen as representative of claims 4, 5, 20 and 21. Claim 4 recites:

> The bone screw of claim 2, n1 wherein:
>
> a) each of said driver means opens on the periphery of said head.

> n1 Claim 2 recites: "The bone screw of claim 1, wherein: a) each of said driver means is formed in said head and opens on said surface."

B. The Prior Art

Gogolewski

U.S. Patent No. *5,275,601* to Gogolewski et al. ("Gogolewski") discloses a self-locking absorbable bone screw and plate system, as shown in Figures 1a, 4a, and 4b below. The absorbable bone screw has a threaded shaft for insertion [*5] into the bone, and a head to connect it in the screw hole of a bone plate. The head is flared and the outer surface is corrugated to lock into the bone plate. The bone screw has a hexagonally shaped hole to allow insertion of the bone screw with the use of a hexagon shaped tool.

[SEE FIGURE 1a AND FIGURE 4b IN ORIGINAL]

Treharne

U.S. Patent No. *4,973,333* to Treharne ("Treharne") discloses a reabsorbable compressing screw for repairing bone fractures, shown in Figure 2 below. The screw can be provided with a head that is designed to allow a faster absorption rate by exposing more of its surface area to body fluids. The screw also can include a head with notches and slots to accommodate a driving tool.

[SEE FIGURE 2 IN ORIGINAL]

Rich

U.S. Patent No. *4,466,314* to Rich ("Rich") is entitled "NONSLIP FASTENER TORQUING SYSTEM." Rich discloses a nonslip fastener torquing system that uses a fastener (e.g., a screw) with a special head that has a "threaded recess" and "torque receiving recesses" matched to a tool that threadably engages (i.e., screws into) the head and uses the threaded engagement to provide a solid base for torque applicators, such as drive pins or [*6] drive blades so that high torque fasteners, which otherwise would use Phillips or other torquing systems, can be installed and removed without fear that the torquing tool will cam out of the head of the fastener and thereby ruin the fastener. As shown in Figures 1 through 4 below, Rich describes a driver tool 26 having a stud 28 that threadably engages the bore 18 of a screw 12. An advantage of Rich is that it does not require a jig or other holding device to prevent the camming action, thus reducing the cost of installing and removing the fasteners.

[SEE FIGURES 1, 2, 3 AND 4 IN ORIGINAL]

In the "BACKGROUND OF THE INVENTION" Rich teaches that, in the aerospace industry, there is an extensive use of fasteners which are torqued to high levels. These fasteners commonly are made from expensive materials, such as titanium. Conventional slots, or arrangements such as Phillips heads, tend to fail when the torquing tool is not perfectly centered or oriented with respect to the head of the screw. The common failure mode is for the tool to come out of alignment with the fastener head and cam out of the recess in the head—causing the recess to become deformed and making the fastener unusable. [*7] This can present a sizable manufacturing and maintenance expense.

Rich identifies a "need for a positive, recessed, fastener torquing system whose tooling can be used universally and which greatly reduces the cost of installing and removing the fasteners." Rich also teaches that "it is an object of the present invention to provide a fastener torquing system which can be used repeatedly without damage to the head of the fastener." Another object of Rich "is to eliminate the 'camming out' problem commonly associated with fasteners having recessed torqued application means." Yet another object of Rich "is to provide a torque

application system which can be adapted to various sizes of fasteners and torque requirements."

Boschetto

U.S. Patent No. *4,466,315* to Boschetto et al. ("Boschetto") discloses a combination tool that is used to drive simultaneously a screw requiring a screwdriver as a driving element and a screw requiring a spanner wrench as a driving element, as shown in Figure 1 below. One object of the invention is to provide a tool including the spanner wrench that can be used without the screwdriver portion. One embodiment shows peripheral slots extending longitudinally [*8] of the sleeve-like body. Another embodiment shows the slots opening on the periphery of the screw head. The peripheral slots are engaged by the lugs of the spanner wrench portion of the combination tool.

[SEE FIGURE 1 IN ORIGINAL]

C. Procedural History

During prosecution, the examiner rejected claim 1 for obviousness in view of Gogolewski and Rich, or Treharne and Rich. The examiner also rejected claim 4 for obviousness in view of Gogolewski, Rich and Boschetto, or Treharne, Rich and Boschetto. The Board affirmed the examiner's rejections.

With respect to representative claim 1, the Board found that Gogolewski and Treharne disclose reabsorbable bone screws with a head portion. The Board also found that Rich discloses a nonslip fastener torquing system. With respect to representative claim 4, the Board found that Boschetto discloses a screw head with slots along its periphery. The Board rejected Huene's argument that Rich is nonanalogous art and determined that Huene's secondary evidence of nonobviousness did not overcome the strong prima facie case of obviousness.

Huene requested rehearing. The Board granted the request to the extent of reconsidering its decision, but denied [*9] the request with respect to making any changes in the decision. The Board also noted a typographical error in its earlier opinion with respect to its conclusion that Rich is analogous art under the test set forth in *In re Wood, 599 F.2d 1032, 1036, 202 U.S.P.Q. (BNA) 171, 174 (CCPA 1979)* ("The determination that a reference is from a nonanalogous art is . . . two-fold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved."). In particular, the Board's earlier opinion mistakenly stated that "Rich falls at least into the former category [i.e., within the field of the inventor's endeavor] of the Wood test." The Board's opinion on rehearing made it clear that, in the Board's opinion, "Rich falls at least into the **latter** category of the Wood test" (emphasis in original), and that it had mistakenly referred to the "former" category of the Wood test in the earlier opinion.

II.

Under *35 U.S.C. § 103*, "[a] patent may not be obtained . . . if the differences between [*10] the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." Obviousness under *35 U.S.C. § 103* is a legal conclusion based upon four factual inquiries. See *B.F. Goodrich Co. v. Aircraft Braking Systems Corp., 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996)*. "These inquiries consist of: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any, of nonobviousness." Id. (citations and quotations omitted). We review the ultimate conclusion of obviousness de novo. See *In re Donaldson Co., 16 F.3d 1189, 1192, 29 U.S.P.Q.2D (BNA) 1845, 1848 (Fed. Cir. 1994)* (en banc). We review the Board's fact findings under the substantial evidence standard of the Administrative Procedure Act. See *Dickinson v. Zurko, 527 U.S. 150, 152, 144 L. Ed. 2d 143, 119 S. Ct. 1816 (1999); In re Gartside, 203 F.3d 1305, 1315, 53 U.S.P.Q.2D (BNA) 1769, 1775 (Fed. Cir. 2000)*. [*11]

"The scope of the prior art has been defined as that 'reasonably pertinent to the particular problem with which the inventor was involved.'" *Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 U.S.P.Q. (BNA) 871, 876 (Fed. Cir. 1983)* (quoting *In re Wood, 599 F.2d at 1036, 202 U.S.P.Q. (BNA) at 174)*. "Secondary considerations include evidence of factors tending to show nonobviousness, such as commercial success of the invention, satisfying a long-felt need, failure of others to find a solution to the problem at hand, and copying of the invention by others." *B.F. Goodrich, 72 F.3d at 1582, 37 U.S.P.Q.2D (BNA) at 1318.*

Huene's main argument on appeal is that Rich is not analogous prior art and that, therefore, it was improperly combined with Gogolewski and Treharne. In particular, Huene argues that Rich is nonanalogous art because it is directed to a titanium aircraft screw, whereas Gogolewski and Treharne are directed to bioabsorbable screws. According to Huene, the problem Rich sought to solve arose due to the hardness of titanium. By contrast, Huene asserts, the problem he set out to solve (failure of the bone screw to maintain proper alignment during

[*12] insertion) arose as a result of the softness of the absorbable fastener material. Thus, Huene claims that one confronting a problem due to the softness of material would not look to how others solved problems attributable to hardness. According to Huene, nothing in Rich suggests its use with soft materials, such as an absorbable bone screw. Also, Huene contends that the PTO itself has recognized that Rich is nonanalogous art because it has classified Rich differently than Gogolewski and Treharne. n2

> n2 Rich is classified under U.S. Patent Class 81 (Tools), whereas Gogolewski and Treharne are classified under U.S. Patent Class 606 (Surgery).

Whether a prior art reference is analogous art is a question of fact. See *In re Paulsen, 30 F.3d 1475, 1481, 31 U.S.P.Q.2D (BNA) 1671, 1675 (Fed. Cir. 1994).* We have stated that "two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference [*13] is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Clay, 966 F.2d 656, 658-59, 23 U.S.P.Q.2D (BNA) 1058, 1060 (Fed. Cir. 1992)* (citations omitted).

Rich is not in the same field of endeavor as Huene. However, it still may properly be combined with Gogolewski or Treharne if it is reasonably pertinent to the problem Huene attempts to solve. See *id. at 659, 23 U.S.P.Q.2D (BNA) at 1060-61.* "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." *Id., 23 U.S.P.Q.2D (BNA) at 1061.* Consequently, "the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve." Id. Thus, we have stated that "if a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact [*14] supports use of that reference in an obviousness rejection." Id. As far as the matter of analogous prior art is concerned, evidence of classification of prior art in different categories by the PTO "is inherently weak . . . because considerations in forming a classification system differ from those relating to a person of ordinary skill seeking solution for a particular problem." *In re Mlot-Fijalkowski, 676 F.2d 666, 670 n.5, 213 U.S.P.Q. (BNA) 713, 716 n.5 (CCPA 1982).*

We see no reason to disturb the Board's finding that Rich is analogous prior art and thus relevant to the obviousness inquiry. Rich is reasonably pertinent to Huene's field of endeavor because both Rich and Huene sought to solve the same problem—i.e., the misalignment of a tool and a fastener and the camming out that can occur due to misalignment. Rich is directed to the same purpose as Huene. The problem that Rich sought to solve was the destruction of fastener heads when the application tool slips out of alignment and the tool "cams out" of the screw head. This is the same problem described in Huene's application—i.e., maintaining the proper alignment of the screw and the tool during insertion of the [*15] screw. Significantly, neither Rich nor Huene points to the hardness or softness of the screw material as the cause of the problem he set out to solve. Rather, they both discuss the importance of maintaining alignment of the tool and the screw during insertion, and teach that it is misalignment of tool and fastener that causes the problem. The Board's factual determination that Rich is analogous art is supported by substantial evidence.

Huene also argues that Gogolewski teaches away from the claimed invention because it discusses difficulties in attempting to transfer features found with metal screws into bioabsorbable screws. In making this argument, Huene points to statements in Gogolewski that "the use of a thread thickness typical for metallic screws in the resorbable screws, would result in permanent erosion of the crests, and thus the loss of stability of bone fracture fixation."

We reject Huene's argument that Gogolewski teaches away from the claimed invention. Whether a reference "teaches away" from a claimed invention depends on the particular facts. See *In re Gurley, 27 F.3d 551, 553, 31 U.S.P.Q.2D (BNA) 1130, 1131 (Fed. Cir. 1994).* "In general, a reference will teach [*16] away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." Id. That is not the case here. Gogolewski does not teach away from the claimed invention merely because it notes problems with "the use of a thread thickness typical for metallic screws." Significantly, it does not describe any difficulty in using absorbable material rather than metal in the context of the problem of camming out due to a failure to maintain alignment of the tool and screw during insertion.

For the foregoing reasons, the decision of the Board is affirmed.

Each party shall bear its own costs.